

Notice of Allowability

Application No.

10/694,107

Applicant(s)

GRACE ET AL.

Examiner

Art Unit

Olga Asinovsky

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Feb 27, 2006.
2. ☒ The allowed claim(s) is/are 1-13.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>Mar 06 2006</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: The claimed invention is a non-aqueous, dual-cure coating composition comprising a blocked (cyclo)aliphatic polyisocyanate comprising: (a) from about 5 to about 85% by weight of a blocked (cyclo)aliphatic polyisocyanate prepared by i) reacting a hydroxyl-functional (meth)acrylate with an organic (cyclo)aliphatic polyisocyanate with an NCO to OH equivalent ratio of from about 1.5:1 to about 3:1, with the resulting partially blocked isocyanate having an isocyanate group content of from about 5 to about 13% by weight, and wherein said organic polyisocyanate is selected from the group consisting of uretdione-containing, biuret-containing, isocyanurate-containing and urethane-group containing polyisocyanates, and ii) reacting the remaining isocyanate groups with a blocking agent, b) from about 5 to about 85% by weight of a hydroxyl-functional polymer having an OH number of from about 10 to about 250 and an acid number of from about 0.1 to about 50, with the equivalent ratio of blocked isocyanate groups to hydroxyl groups being from about 0.8:1 to about 1.2:1, said hydroxyl-functional polymer being selected from the group consisting of saturated polyester, unsaturated polyester, and mixtures thereof, c) is an optional compound having ethylenically unsaturated monomer linkage (other than unsaturated polyesters), and d) from about 0.1 to about 7% by weight of a UV initiator for free-radical polymerization, said percentages by weight totaling 100%, and with the proviso that if ingredient b) is a saturated polyester, ingredient c) is present in an amount of from 20 to about 65% by weight.

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The present claims disclose specified organic polyisocyanate having terminal urethane group -NH-COO- or urea group $\text{NH}_2\text{-CO-NH-}$, or derivative thereof, selected from the group consisting of uretdione-containing, biuret-containing, isocyanurate-containing and urethane-group containing polyisocyanates.

The closest reference of record is U.S. Patent 6,617,413 to Bruchmann et al.

Upon reconsideration of the evidence of record together with the applicants' arguments in the Appeal Brief filed on November 21, 2005 and the correction on February 27, 2006, it was found that the reference U.S. Patent 6,617,413 to Bruchmann et al does not disclose all limitations for the blocked (cyclo)aliphatic polyisocyanate in the present claims.

Bruchmann discloses a main compound I having isocyanate groups -N=C=O , column 3, line 15. Bruchmann also discloses a mixture of said compound I and the organic polyisocyanate having a group selected from the series consisting of urethane, urea, biuret, uretdione (referring in Bruchmann as polyisocyanates of higher functionality), column 4, lines 44-45 and 47-52 and column 5, lines 15-42. The organic polyisocyanate having a group selected from the series consisting of urethane, urea, biuret, uretdione in Bruchmann is equivalent to the specified organic polyisocyanate having terminal urethane group -NH-COO- or urea group $\text{NH}_2\text{-CO-NH-}$, or derivative thereof in the present claims. However, in the working example at column 14 Bruchmann teaches that the compound I is reacting with 2-hydroxyethyl (meth)acrylate.

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Bruchmann does not teach or suggest that the polyisocyanate of higher functionality containing urethane, urea, biuret or uretdione is reacted with a hydroxyl-functional (meth)acrylate. Bruchmann does not disclose that said high functionality polyisocyanate is reacted with a hydroxyl-functional (meth)acrylate in the specified ratio of an NCO to OH of from about 1.5:1 to about 3:1, and wherein the resultant partially blocked isocyanate has an isocyanate group content of from about 5 to about 13 wt.%. Bruchmann does not disclose that the remaining isocyanate groups are blocked with a blocking agent.

2. The accompanying IDS, filed on March 06, 2006, listed references, which were not of record during the earlier filed application prosecution. The IDS has been considered and entered. References do not raise a prima facie case of unpatentability with respect to the present claims.
3. The closest reference is US Patent 6,747,088 to Schwalm et al. Schwalm discloses polyisocyanates containing uretdione groups, biuret groups or urethane groups and/or allophanate groups reactive with hydroxyl group(s) containing compound, column 2, lines 37-55. The hydroxyl group containing compound can include the hydroxyalkyl (meth)acrylates having hydroxyl group and containing C=C group which has a benefit for UV polymerization, column 4, lines 40-47. However, the preferred compound is compound of formula I, column 3, line 3. Also, reference does not disclose the ratio of NCO to OH and the content of blocked isocyanate group requiring in the present claims.

4. Okamura discloses a process for formation of urethane by a reaction between isocyanate and hydroxyl groups containing compound.
5. WO 03/087246=US Patent 6,815,501 discloses a process for producing a polyurethane coating comprising hydroxyl-functional polyester urethane having olefinic double bonds and at least one cross-linking agent. The starting polyisocyanate may include uretdione group, biuret group and/or urethane groups, column 4, lines 20-28 at Patent 6,815,501. Reference does not disclose the ratio of NCO to OH and the content of blocked isocyanate group requiring in the present claims.
6. The prior art is no close as that previously of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

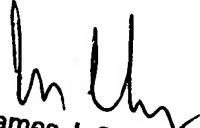
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

O. A.

May 08, 2006

Olga Asinovsky
Examiner
Art Unit 1711


James J. Seidleck
Supervisory Patent Examiner
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